CLAIMS

1. A process for the replication of a nucleic acid template comprising hybridising to said template a primer having a sequence complementary to a portion of said template, which primer is bound to a carrier macromolecule, and extending said primer to replicate said template in complementary form.

2. A process as claimed in Claim 1, wherein said carrier macro molecule is a natural or synthetic polysaccharide, a homopolyamino acid, a natural or synthetic polypeptide or protein, or a synthetic polymer having nucleophilic functional groups.

3. A process as claimed in Claim 1, wherein said carrier macro molecule is a dextran, a starch, an hydroxyethyl-starch, an hydroxypropyl-starch, a glycogen, an agarose derivative or cellulose derivative, or a natural gum.

4. A process as claimed in any one of Claims 1 ~~to 3~~, wherein the carrier macro molecule in its free state is substantially linear and substantially uncharged at a pH in the range of 4 to 10.

5. A process as claimed in ~~any preceding~~ claim, wherein said carrier macro molecule has a peak molecular weight in the range of 1,000 to 40,000,000.

6. A process as claimed in any preceding claim, wherein said carrier macromolecule is water soluble.

7. A process as claimed in any preceding claim, wherein said primer is bound to said carrier macro molecule via one or more moieties derived from divinyl sulphone, each of which moieties is attached to each of the carrier macromolecule and the primer by a covalent linkage formed between one of the two

vinyl groups of a divinyl sulphone molecule and a reactive functionality on the carrier macromolecule or primer.

8. A process as claimed in any preceding claim, wherein said primer is extended by the action of a polymerase incorporating nucleotides on to said primer.

9. A process as claimed in Claim 7, wherein said primer is extended in a polymerase chain reaction (pcr), strand displacement amplification (sda), self-sustained sequence replication (3sr) or nucleic acid sequence-based amplification (nasba) amplification procedure.

10. A process as claimed in any one of Claims 1 ~~to 7~~, wherein said primer is extended by the action of a ligase ligating said primer to at least one further primer hybridised to said template.

Sub A27

11. A process as claimed in Claim 7, wherein said template is a double stranded template and is denatured to single stranded form, said carrier macromolecule-bound primer is complementary in sequence to a region of a first one of the template strands and a second primer is provided which is complementary in sequence to a region of the other strand, which second primer is also extended so as to form a complementary sequence copy of said template second strand.

12. A process as claimed in any preceding claim, wherein said carrier macromolecule is bound to a solid support.

13. A process as claimed in Claim 8, wherein a second primer is extended in said amplification procedure which is also bound to a carrier macromolecule.

14. A process as claimed in Claim 10, wherein a said further primer which is ligated by said ligase is also bound to a carrier macromolecule.

15. A process as claimed in any preceding claim, wherein during the extension of a said primer, a detectable marker is incorporated into the extended primer.

16. A process as claimed in any preceding claim, wherein said extension of the primer is conducted in situ in a biological sample.

17. A process as claimed in Claim 14, wherein said biological sample is a plant or animal tissue sample, microorganism culture, or microorganism culture medium.

SubB2 18. A method of detecting the presence of a nucleic acid bound to a carrier macromolecule comprising providing a second nucleic acid bound to a carrier macromolecule, contacting said nucleic acids under hybridisation conditions and detecting hybridisation between said nucleic acids.

19. A method of detecting the presence of a nucleic acid template sequence comprising replicating the template by a method as claimed in any one of Claims 1 ~~to 17~~ to produce SubA27 replicated template bound to a said carrier macromolecule and detecting the presence of said replicated template bound to the carrier macromolecule by a method as claimed in Claim 18.

20. A method of detecting a nucleic acid sequence comprising making a probe for detecting said sequence by using said SubA27 sequence as a template sequence in a method as claimed in any one of Claims 1 ~~to 17~~ such that said probe comprises said extended primer having a sequence complementary to said sequence to be detected bound to said carrier macromolecule, removing any free nucleic acid not bound to said carrier

macromolecule therefrom, and using the probe to detect the nucleic acid sequence in a sample by hybridisation thereto.

Sub B3

21. An immobilised nucleic acid comprising a nucleic acid bound to a carrier macromolecule which macromolecule is itself bound to a solid support.

22. The use of an immobilised nucleic acid as claimed in Claim 21 as a primer or as a hybridisation probe.

09/760,819